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CROP PRODUCTION NEWS

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CROP PRODUCTION

PRODUCTION

Editor's Comments

Ray McVicar, Crops Branch, Saskatchewan Agriculture

The 2009 growing season is off to a slower-than-average start. Many of the questions coming into the Agriculture Knowledge Centre and Crops Branch – and the samples coming in the Crop Protection Laboratory – are a result of cool weather. Most articles in this edition of the Crop Production News also reflect these questions.

The *2009 Guide to Crop Protection* includes extensive product information on herbicides, insecticides and fungicides. To make good use of the guide (see www.agriculture.gov.sk.ca/Guide_to_Crop_Protection), growers and agronomists should also refer to the other valuable information it contains, such as:

- **Staging**: With the variable growing conditions this spring, crop and weed staging for pesticide application is not easy. The guide contains information and plant diagrams describing how to identify leaf stages.
- **Tank Mixing**: Weather conditions have limited the window of application this spring. The guide contains information on mixing pesticides.
- **Contacts:** A list of pesticide formulations, manufacturers and contacts is provided so the producer can obtain more detailed product information, if necessary.
- **Safety**: Safety is always of great importance when applying pesticides. The guide includes information on the safe use of products, as well as avoiding spray drift, cleaning tanks and disposing of containers.

For an update on provincial crop progress throughout the growing season, see the weekly Crop Report at www.agriculture.gov.sk.ca/Crop-Report.

NOTE: Throughout this document, you will see that some publications are in blue font and underlined, indicating links to website information. If you are reading this off your computer screen, press the CTRL button and click your cursor on the link to take you directly to the website. ☼

Crop Production News is a biweekly publication prepared primarily by provincial specialists with the Crops Branch of the Saskatchewan Ministry of Agriculture. It is a compilation of articles related to entomology, plant pathology, weed science, soils and agronomy issues.

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INSIDE

Alfalfa Weevil Increasing in Saskatchewan

By Michel Tremblay, Provincial Specialist, Forage Crops

The alfalfa weevil (*Hypera postica*) has been observed primarily in the southeastern and east-central parts of the province in alfalfa hay and seed fields. The alfalfa weevil was accidentally introduced into North America in 1904, and quickly became a major pest throughout the United States.

Pest Identification

Adult weevils are approximately 5 mm in length and brown, with a darker brown stripe running down the back from the head. It is a snout beetle, with a pronounced hook-shaped proboscis at its anterior end. The larvae (Figure 1), when newly hatched, are yellowish green. At maturity, larvae are approximately 8 mm in length, with a black head and a white stripe down the centre of the back.

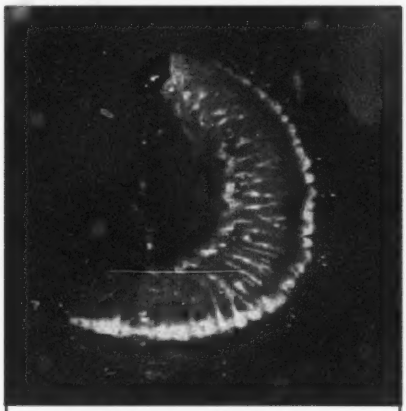

Figure 1. Alfalfa weevil larvae.
Source: J. Soroka, Agriculture and Agri-Food Canada.

Life Cycle

Adult weevils over-winter under plant debris and soil, emerge in spring and begin feeding on alfalfa leaves, creating round holes in the leaves. Females chew holes in the stem of the alfalfa plant and deposit from one to 40 eggs. The bright yellow eggs can be seen with the naked eye if the stem is cut open. When the eggs hatch, the emerging larvae initially feed within the stem before moving on to the developing buds and newest leaves. Damage begins as pinholes and progresses to leaf surfaces between veins, resulting in a ragged, skeletonized leaf. Often the first sign of weevil damage is the discoloration of the crop as the larvae feed. The crop will develop a whitish sheen, or frosted appearance, due to foliar damage, which can be clearly seen from the edge of the field.

Larvae feed primarily in May and June. In late June and early July, the larvae move down to the base of the plants and spin lace-like cocoons. The adults emerge from the cocoons in one to two weeks. Usually, a single generation of the weevil occurs per season in northern climates.

Field Scouting

Fields that are being monitored should be walked in a W-shaped pattern to efficiently and thoroughly check for the pest. Collect 30 stems while walking the field, and place them in a white pail. Beat the stems against the side of the pail to dislodge the larvae. The economic thresholds for chemical control of alfalfa weevil are:

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Alfalfa Weevil Increasing In Saskatchewan
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Seed:

- Foliage: 35-50 per cent of foliage tips show feeding damage

- Larvae: 20-30 third/fourth instar larvae per 90 degree sweep of insect sweep net

Hay:

- 30 cm crop height and one larva/stem
- 40 cm crop height and two larvae/stem
- three larvae/stem require immediate action regardless of the height of the crop

Control of Alfalfa Weevil

Various wasps, ladybugs, lacewings and damsel bugs are predators of weevil larvae. A fungal pathogen can also infect weevil larvae. Infected larvae are yellow or tan in colour, and slow moving.

Maximum feeding damage by alfalfa weevil coincides with early bloom of alfalfa. Early bloom harvesting results in the best compromise between yield and quality during haymaking. Cutting when significant weevil damage occurs will stop yield loss. In the case of severe infestations, or if early cutting is not feasible, chemical control of alfalfa weevil can be accomplished by using insecticides listed in Table 1.

Table 1. Chemical control of alfalfa weevil.
Source: Saskatchewan Agriculture.

Insecticide / Group	Rate/Acre	Cost/Acre	Pre-harvest interval (days)	Application (A=aerial; G=ground)	LD50 (Mammalian Toxicity)
Matador / Silencer (P)	34 ml	$5.38	Do not apply within 3 days of livestock foraging.	A or G (Matador) G (Silencer)	64-110
Decis 5EC (seed crops only) (P)	80 – 100 ml	$6.87-$8.58	20	G	395
Malathion 500 (OP)	0.80-1.21 L	$10.84-$16.40	7	A or G	4302
Malathion 500E (larvae only) (OP)	0.91-1.11 L	$11.14-$13.59	7	A or G	1375-2800
Imidan (OP)	0.91 kg	$26.12	7	G	285
Lagon / Cygon 480 EC / Cygon 480-AG (OP) (reduction only)	0.17 L	$4.59-$4.74	2	A or G	60-450

P = pyrethroid, OP = organophosphate✡

Short Lentils a Result of Cool Weather

By Dale Risula, Provincial Specialist, Special Crops and
Dr. Bert Vandenberg, Crop Development Centre, U of S

Calls have been received from producers concerned that their lentil plants appear shorter-than-usual this spring. Reports are that lentils are at the six-node stage, but are "shorter than a coffee cup" (less than 10 cm). This is a particular concern for first-time lentil growers, who have not experienced these lentil-growing conditions before.

Dr. Bert Vandenberg, lentil breeder with the Crop Development Centre, University of Saskatchewan, says that producers need not worry. The first six nodes tend to be short, but it is the next six nodes that are most critical. The first node is often found below the soil surface. A stipule (or scale leaf) will form at the first and second nodes (Figure 2). The first true leaf appears at the third node. Flowering begins at about 11 to 13 nodes, depending on the variety.

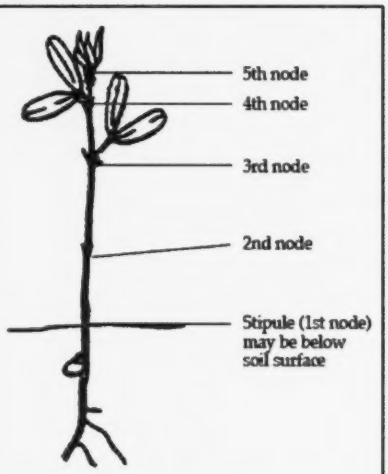

Figure 2: Lentil Seedling.
Source: Saskatchewan Agriculture

This spring's cool and dry conditions have slowed the development of new nodes and shortened internode length. Areas that received heavy frost may have experienced damage to the growing point – these plants will recover from the branches that develop from the remaining lower nodes and could be delayed somewhat. If the weather warms up to above-average, the next internodes will be longer and will develop more quickly. Rapidly growing plants often look pale on the top, as the internodes stretch and the new leaves develop. Regions that received rain in the last week will see accelerated growth in mid-to-late June. Remember, most of the yield on a lentil plant forms on the branches that develop on the main stem. These originate from the lower above-ground nodes. Any rain in the next few weeks will be a positive influence on both yield and height. When you start to see tendrils developing at the leaf tips, your lentil crop will be blooming in about 10 days.

General guidelines:

- Lentils add a node about every four days under average temperatures.
- With colder conditions, assume five days per node.
- With warmer-than-average temperatures, assume three days per node. For example: assuming a May 12 seeding date and a growth rate of five days per node, the growth stage for lentils on June 17 should be about seven nodes.
- The application of imidazolinone (imi) herbicides to non-tolerant varieties will often cause a delay of a few days. Herbicide-tolerant (HT) varieties should not suffer any delay. ☼

Managing Soil Moisture in Green Manures

By Chantal Jacobs, Provincial Specialist, Organic Crops

Using green manures in rotation is a balancing act to minimize soil moisture use while maximizing nitrogen benefit, and green manure termination timing is particularly important in low rainfall areas. There are several ways to manage soil moisture while using green manures, including choosing a legume for the soil moisture conditions, timely stand termination and choosing termination methods that optimize surface residue and snow-trapping potential.

The most common legume green manures used in Saskatchewan include annuals such as pea, lentil and chickling vetch; biennials like sweet clover; and perennials such as alfalfa and red clover (short-lived perennial). During the two to three years in rotation, alfalfa, red clover and sweet clovers develop extensive root systems that provide significant biomass and nitrogen to the soil upon incorporation, but they also tend to dry out the soil in low moisture conditions. Shallow-rooted annuals such as pea, lentil and chickling vetch return less biomass and nitrogen to the soil, but also use less soil moisture. Given the growing conditions this spring, termination timing will be different than in previous years, so growers must consider the correct stage for incorporation to maximize soil nitrogen benefit while minimizing soil moisture use.

Research at Saskatoon showed that termination timing of sweet clover green manure had a significant impact on soil moisture usage and subsequent wheat yields in two out of three years (see Table 2). Incorporating sweet clover early (June 15) consistently resulted in the highest wheat yields in the following year. It is recommended that sweet clover incorporation occur at the bud stage and no later than 10 per cent bloom, as the majority of the nitrogen fixation has occurred by this stage, and termination will allow for soil moisture recharge and residue decomposition.

Table 2. The effect of sweet clover incorporation date on succeeding spring wheat grain yield at Saskatoon, SK (1981-1983).
Source: Saskatchewan Agriculture

	1981	1982	1983
Date of Incorporation	**Mean Wheat Yield (kg/ha)**		
June 15	1484	2906	3214
July 1	1209	2769	3201
July 15	823	2539	3131
BLSD-Date (K=100)*	152	86	No Significance

*BLSD, Bayes least significant difference (for comparison of any two means).
Adapted from: Foster, R.K., H.M. Austenson. 1990. Management of sweet clover and alfalfa in cereal rotations.

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Managing Soil Moisture in Green Manures
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The majority of legume nitrogen fixation occurs prior to the flowering stage, and nodule activity slows as the plant enters into the reproductive phase of its life cycle.

With annual legumes, incorporation should occur between the late-bud and full-bloom stages in average to good moisture conditions, and earlier, at budding, if conditions are dry. Research at Scott, Saskatchewan, showed that a lentil green manure crop returned 38 and 75 kg/ha nitrogen to the soil at early (bud) and late (full bloom) incorporation, respectively (Brandt, 1990). In adequate moisture conditions, the additional nitrogen benefit gained from leaving an annual legume to full bloom may be feasible, but may negatively affect subsequent crop yields under dry conditions.

The final tool in managing soil moisture is the method of incorporation. Various implements can be used, ranging from those that result in complete incorporation, like the mouldboard plough (Figure 3), to systems in which the green manure is mowed and/or disced under (Figure 4). A lack of crop residue can lead to soil erosion and increased soil moisture loss from the soil surface. Maintaining crop residues on the soil surface and using trap strips, can help catch snow to increase available soil moisture the following spring.

Figure 3. Incorporation of a red clover stand in the Black soil zone using a mouldboard plough.
Source: Saskatchewan Agriculture.

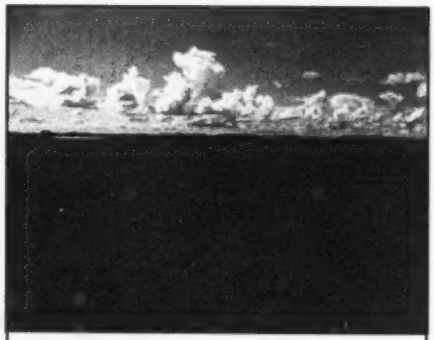

Figure 4. A three-year alfalfa stand is mowed and will then be disced under in the Black soil zone.
Source: Saskatchewan Agriculture.

For more information on assessing stored soil moisture, moisture conservation practices and tillage management, check the Saskatchewan Agriculture website at:

Measuring stubble subsoil moisture to determine stored water
(www.agriculture.gov.sk.ca/Production. Follow the link to Crops – Seeding, then *Measuring stubble subsoil moisture to determine stored water*.)

Organic Crop Production: Soil Conservation Practices
(www.agriculture.gov.sk.ca/Production. Follow the link to Crops – Organics, then *Organic Crop Production: Soil Conservation Practices*) ✿

Optimum and Minimum Plant Populations for Crops

By Elaine Moats, Regional Crops Specialist and Denise Yont, Communications and Information Specialist, Saskatchewan Crop Insurance

If crop emergence is poor or uneven for whatever reason, the question becomes, "how do I determine if reseeding is necessary?" The following tables are worthy of "top drawer filing" as they are great references to use when evaluating the plant population in a field. To determine your plant stand, count the plants that are most likely to survive the growing season. More-advanced plants have a greater probability of survival: cereals – two to three leaves; pulses –first to third node; and oilseeds – one to two true leaves.

Table 3 includes optimum and minimum plant densities for crops commonly grown in Saskatchewan. The third column in Table 3 refers to "Minimum Plant Density for a Satisfactory Yield". "Satisfactory yield", means different things to different people and in most cases it will be lower than the provincial average yield. The main factors that will influence the outcome of a field with low plant densities include: the level of weed control, uniformity of plant density across the field and growing season rainfall. Insects and disease pressure may also affect the outcome.

Table 3. Optimum and Minimum Plant Densities
Source: Saskatchewan Agriculture

Crop	Optimum Plant Density	Minimum Plant Density for possible satisfactory yield *
Cereals	240-260 plants/m^2 22-24 plants/ft^2	110 plants/m^2 10 plants/ft^2
Winter Wheat	215-250 plants/m^2 20-25 plants/ft^2	45-63 plants/m^2 4-6 plants/ft^2
Mustard	80-180 plants/m^2 7-17 plants/ft^2	40 plants/m^2 4 plants/ft^2
Canola (argentine)	70-120 plants/m^2 7-12 plants/ft^2	40 plants/m^2 4 plants/ft^2
Canola (polish)	70-170 plants/m^2 7-17 plants/ft^2	40 plants/m^2 4 plants/ft^2
Pea	75-88 plants/m^2 7-8 plants/ft^2	22 plants/m^2 2 plants/ft^2
Lentil	130 plants/m^2 12 plants/ft^2	33 plants/m^2 3 plants/ft^2
Chickpea / Dry Bean	33-44 plants/m^2 3-4 plants/ft^2	22 plants/m^2 2 plants/ft^2
Flax	300-500 plants/m^2 28-46 plants/ft^2	110 plants/m^2 10 plants/ft^2
Canaryseed	300 plants/m^2 27 plants/ft^2	110 plants/m^2 10 plants/ft^2
Buckwheat	143-187 plants/m^2 13-17 plants/ft^2	65 plants/m^2 6 plants/ft^2

*assumes good weed control for this minimum density plant count

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Optimum and Minimum Plant Populations for Crops

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Producers with a Saskatchewan Crop Insurance Corporation contract are reminded that, in order to be eligible for an establishment claim, a minimum of 10 acres or 10 per cent of the total seeded acres must have failed to establish. Crops that suffer damage or fail to establish (Table 4) before June 20 are eligible for an Establishment Benefit payment. Establishment Benefits for many crops have increased. The values can be found at: http://www.saskcropinsurance.com/programs/coverage/establishment.shtml

Organic producers are eligible for an Organic Reseeding Benefit for any acres that have to be tilled and reseeded due to weeds. This benefit is available due to the limited weed control options for organic crops.

Producers with crop insurance should remember to check with their local Saskatchewan Crop Insurance Corporation office before reseeding or destroying acres so that they may be inspected by an adjuster. Reseeded crops must still abide by the recommended seeding deadlines.

Table 4. Establishment Benefit Plant Density Guidelines
Source: Canada-Saskatchewan Crop Insurance Corporation **

Crop	Establishment benefit Plants per yd^2	Customer choice Plants per yd^2	No establishment benefit Plants per yd^2
HRS Wheat	Less than 70	70-110	110 +
Durum Wheat	Less than 70	70-110	110 +
Barley	Less than 70	70-110	110 +
Oats	Less than 70	70-110	110 +
Flax	Less than 100	100-150	150 +
Canola (argentine)	Less than 25	25-40	40 +
Canola (polish)	Less than 25	25-40	40 +
Fall Rye	Less than 45	45-63	63 +
Sunflower	Less than 3	3-4	4 +
ESRS Wheat	Less than 70	70-110	110 +
Mustard (Oriental)	Less than 25	25-40	40 +
Mustard (White/Yellow)	Less than 25	25-40	40 +
Canaryseed	Less than 70	70-100	100 +
SWS Wheat	Less than 70	70-110	110 +
Spring Rye	Less than 70	70-110	110 +
Triticale	Less than 70	70-110	110 +
Winter Wheat	Less than 45	45-63	63 +
Dry Bean	Less than 10	10-20	20+
CPS Wheat	Less than 70	70-110	110 +

**based on Saskatchewan Agriculture's recommended plant densities and seeding rates. ✪

Seedling Health: Stressed Plants May Be Prone to Root Rot

By Faye Dokken, Provincial Specialist, Plant Disease

Have you checked your roots lately? Seedling health issues may be caused by environmental stress and/or seed- and soil-borne plant pathogens, which can cause disease individually or in the form of a disease complex. Symptoms of seedling diseases may be confused or compounded by the plant's response to extreme soil temperatures and deficient/excessive moisture. Damping-off (death just after germination or collapse at emergence), seedling blight (sudden, severe withering or death after emergence) and root rot (decay or lesions on the roots) may occur in patches of the field where conditions are especially poor for growth (i.e. low spots, water runs) or, in some cases, may be scattered throughout the field where the pathogens are ubiquitous in the soil. Careful scouting is required.

Figure 5: Symptoms of root rot on pea include wilting, stunting and yellowing of foliage in patches, along with poor nodulation and decaying of roots.
Source: Saskatchewan Agriculture

Table 5: Seedling Diseases and Environmental Conditions
Source: Saskatchewan Agriculture

Crop	Moist to Cool/Wet	Warm/Dry to Moist
Oat	*Pyrenophora avenae* seedling blight of oat	*Cochliobolus sativus* - common root rot of oat, barley, & wheat - generally reduced root development - plants with rotten roots are easily pulled from soil - leaf-spotting on coleoptile or blight of seedlings - brown lesions on lower stems, leaf sheaths, culm, crown, roots, & sub-crown internode
Barley	*Fusarium* spp. seed rot & seedling blight of barley & wheat some species may also cause Fusarium Head Blight *Pythium* spp. root rot of barley & wheat *Gaeumannomyces graminis* var. *tritici* take-all of wheat & barley	
Wheat		
Canola	*Fusarium* spp. & *Pythium* spp. damping-off, seedling blight, & root rot of canola	*Rhizoctonia solani* - damping-off, seedling blight, root rot & stem rot of canola, chickpea, lentil, & pea - common issue in cold, very wet or very dry soil - seeds fail to germinate or seedlings fail to emerge - water-soaked reddish-brown lesions on roots & stem - shrivelled stem, persisting under dry conditions
Chickpea	*Fusarium* spp. & *Pythium* spp. seedling blight & root rot of chickpea & lentil *Botrytis cinerea* damping-off & seedling blight of chickpea & lentil	
Lentil	*Sclerotinia sclerotiorum* seed-borne seedling blight of lentil	
Pea	*Fusarium* spp. including *F. solani* f.sp. *pisi* root rot of pea *Pythium* spp. including *P. ultimum* seed rot and seedling blight of pea *Aphanomyces euteiches* f.sp. *pisi* root rot of pea	

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Seedling Health: Stressed Plants May be Prone to Root Rot
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Fields with poor crop rotations or inadequate soil nutrients will be at particular risk for seedling diseases. Farmers who planted wheat deeper this year due to their concern about high levels of ergot bodies in their seed may find seedling diseases as plants recover from the further delay in emergence. In pea, cool conditions earlier this spring may have inhibited nodulation by nitrogen-fixing rhizobia, resulting in a nitrogen deficiency. Under these conditions, and in combination with additional moisture-related stresses (very dry or very wet), pea will be more susceptible to infection by root rot pathogens (Figure 5). Seed treatments protect plants during the early stages of seedling growth, but will not protect against seedling diseases this late in the season. With warmer weather, crops will likely recover from early-season stress.☼

Correcting Sulphur Deficiencies in Advanced Growth Stages

By Ken Panchuk, Provincial Specialist, Soils

Canola and mustard have high requirements for sulphur. Sulphur is immobile in plants, so a constant supply is required throughout the growing season, from emergence to the completion of seed filling. If plants run out of sulphur at the seed-filling stage, the result will be empty pods and/or poorly formed seeds.

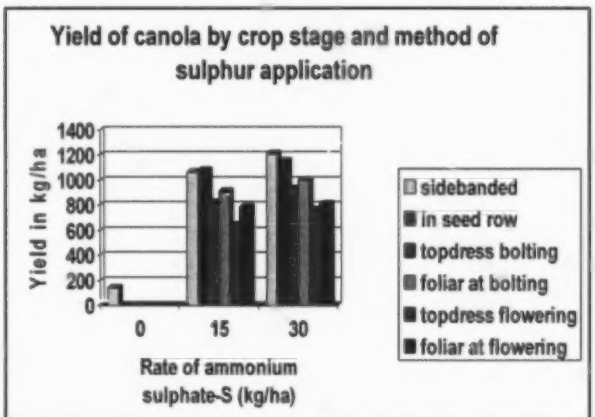

Figure 6: In this research, 120 kg/ha of nitrogen was sidebanded for each treatment.
Source: Canadian Journal of Plant Science, Vol. 85.

If sulphur was not added to canola and mustard fields at seeding, then now is the time to scout your fields, regardless of the growth stage.

Research has shown that a sulphate form of sulphur (ammonium sulphate, ammonium thiosulphate or potassium sulphate) can be applied any time after seeding until about mid-bloom stage to correct a sulphur deficiency in canola or mustard. However, the earlier the sulphate-sulphur is applied, the better the chance of rescuing yield (Figure 6).

Sulphur deficiency symptoms in canola or mustard usually appear in patches within the field. Symptoms include: upward cupping of leaves, interveinal yellowing of the newest leaves in earlier stages of growth, spindly plants, leaves with purpling on the underside (usually at the fringes) (Figure 7), pale yellow to whitish flowers, poor pod development and filling in advanced stages of growth. Delayed maturity can also occur if the sulphur

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Correcting Sulphur Deficiencies in Advanced Growth Stages

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deficiency is not corrected. Corrective action should be taken as soon as possible after identifying the deficiency symptoms.

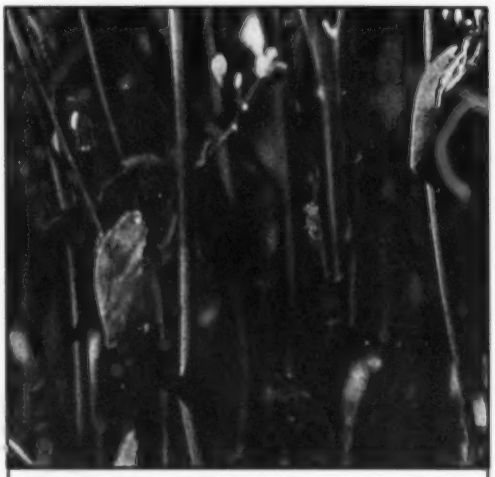

Figure 7. Sulphur deficient canola.
Source: Saskatchewan Agriculture

Granular ammonium sulphate should be applied promptly to minimize yield losses. If ammonium thiosulphate is the source of sulphur, care should be taken to prevent leaf burn.

As a last resort, ammonium sulphate dissolved in high volumes of water can be applied to the foliage with fan nozzles when surface soil conditions are dry and there is little chance of rain moving top-dressed granular sulphate-sulphur into the soil. Foliar application should be made in the cooler part of the day to reduce leaf burn. Flowers are more sensitive to damage than leaves and stems, so field scouting should be completed during the bolting stage, and the ammonium sulphate applied before flowering starts.✿

Flea Beetles and Cutworm Update

By Scott Hartley, Provincial Specialist, Insects and Vertebrate Pests

Cool weather during April and May have not been conducive to crop advancement or insect development; however, there have been some reports of early-season soil- and foliar-feeding insect pests.

Flea beetle infestations have been reported around Saskatoon and in several other areas of the province. In cooler conditions, cotyledon and early vegetative feeding by the beetles may differ from the norm. Flea beetle activity may occur on the underside of the cotyledons and leaf surface (Figure 8). In addition, stem girdling may result if the beetles feed on young stems in the seedling stage. Field scouting should consist of more than just a glance at the upper surface of the plant.

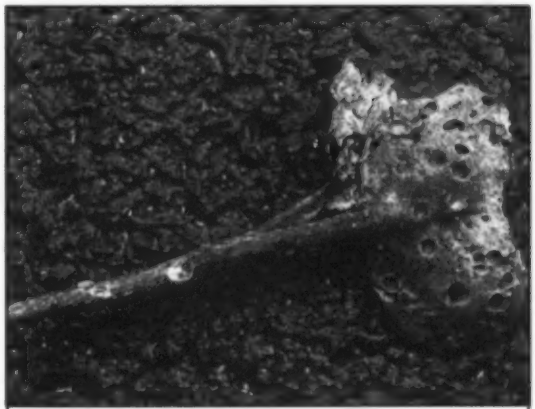

Figure 8. Flea beetle damage.
Source: Canola Council of Canada

Seed treatments containing an insecticide generally provide reliable protection from flea beetles. However, in some situations with

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Flea Beetles and Cutworm Update
(Continued from page 11)

a slow-germinating crop, there is the possibility that seed treatments are no longer effective. An action threshold of 25 per cent of the cotyledon or leaf surface removed by flea beetles may require an insecticide application. Refer to the *2009 Guide to Crop Protection* for foliar insecticide options.

Cutworms are the immature stages of certain moth species (Order *Lepidoptera*, Family *Noctuidae*). Depending on the location in the province, pale western and red-backed cutworms are two of the species most frequently found. For both of these cutworms, the damage is the same and feeding results in seedlings cut at or below the soil surface. Pale western and red-backed cutworms over-winter as eggs that hatch in the spring, generally in April to early May, with pupation occurring in late June to early July, depending on temperature. Due to the cool temperatures in 2009, pupation will likely be at the later end of the range.

In recent years, other cutworm species have also been damaging Saskatchewan crops. There have been several inquiries this spring regarding cutworms, with some specimens submitted to the Crop Protection Laboratory. A couple of less-common species were preliminarily identified as bronzed cutworm (*Nephelodes minians*) and bristly cutworm (*Lacinipolia renigera*).

Dingy cutworms (Figure 9) have also been identified in the northeastern region. The dingy cutworm has been an occasional pest in crops, particularly canola, in the past few years, and differs from the red-backed and pale western cutworms in life cycle and feeding habits. Dingy cutworms feed above ground, consuming the plant foliage.

Dingy cutworms over-winter as larvae, and pupation will occur early to mid-June. The most severe damage is done by later larval stages; however, once the larvae reach a length of about 30 – 35+ mm, their immature phase is nearly complete, and the insects prepare to pupate. At this point, control is generally unwarranted as crop damage will slow and eventually cease.

Foliar insecticides are registered for control of cutworms. Refer to the *2009 Guide to Crop Protection* for registered products in specific crops. Economic thresholds will depend on the cost of control and the value of the crop, and can, therefore, vary from the recommended level. For example, if the value of the crop increases or the cost of control decreases, the economic threshold could be lowered.

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Figure 9. Dingy Cutworm
Source: Crop Protection Laboratory, Saskatchewan Agriculture

Flea Beetles and Cutworm Update
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Some examples of suggested economic thresholds are as follows:

- Spring cereals – three to four cutworms per square metre
- Dry bean – one or more cutworms per metre of row
- Canola – 25 – 30 per cent stand reduction
- Flax – four to five cutworms per square metre
- Sunflowers – 10 cutworms per square metre

Cutworms are more likely to cause damage on hilltops and in drier areas of a field. Insecticides should be applied by spray to the soil surface in the evening. As the cutworms come to the soil surface to feed, they come in contact with the chemical. Higher water volumes can be beneficial for better coverage and soil penetration. Keep in mind that it can take up to 10 days for optimum control, since not all larvae come to the surface on any given night.

Other factors that can affect control include the level of infestation, size of the larvae and crop stage. Higher populations and larger cutworms will be more difficult to control and will require higher rates. A lush crop canopy will prevent the chemical from reaching the soil surface and intended target, resulting in reduced efficacy. Once the cutworms start to pupate, feeding will stop, making control efforts unnecessary. Since cutworm moths lay most of their eggs in August and early September of the preceding year, maintaining weed-free fields later in the summer is advantageous, by making the fields less attractive to the egg-laying females. ☼

Mark Your Calendar

Cereals, Oilseeds, Pulses, Crop Agronomy and Weed Control will be featured at this summer's Crop Development Centre / Plant Sciences Field Day on July 21, 2009.
Kernen Crop Research Farm - Highway 41 and Blakely Road, near Saskatoon. Registration on-site at 8:30 - 9:30 am.
Tours: 9:30 am - 4:00 pm. Lunch: 12:00 pm

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